Work moves without chasing. Records carry their state from draft through partner review to Sense India, and each reviewer opens a queue showing what is waiting for them. Returned work carries the reason it was returned.

Reporting that assembles itself. Master data export produces the consolidated sheet the programme currently builds by hand. The programme dashboard shows active IEPs, objectives pending review, service users with incomplete evaluations, plans without an assigned responsible person, and records approaching their review date, filterable by partner, date range, service user and status. The measurement dashboard sits alongside it, carrying the outcome measures for the programme.

3.4 Scope summary

Component	Phase 1
Platform foundation: multi-tenancy, roles, audit log, Hindi and English internationalisation, offline synchronisation, Registration ID service, document store, notification and scheduling engine including family messaging, measurement telemetry	Included
Record workflow: draft, submitted, reviewed and approved states, with review queues	Included
Partner administration: each organisation manages its own staff, roles and caseloads	Included
Partner due diligence and annual compliance declaration, with document register, validity tracking and Sense India review	Included
MEAL monitoring visits: visit reports, previous report history, suggestion tracking	Included
DPDP consent, including parental and guardian provisions	Included
Survey	Included
Screening, with deafblindness fast-track flag	Included
Enrolment, Registration ID, service user profile	Included
Document upload	Included
Functional vision and hearing assessment	Included
Observation report	Included
Mental health screening across five domains	Included
Mental health intervention planning and session tracking	Included
Personal future plan	Included
Personal passport	Included
Individualised education plan: long-term goals, quarterly short-term objectives, progress recording, review scheduling, monitoring views	Included
Network member registration for four networks, with internship details	Included
Migration of existing records from Excel and Google Forms	Included

Component	Phase 1
Master data export, programme dashboard and measurement dashboard	Included

The architecture accommodates further modules without rework. Anything added later attaches to the beneficiary record described in Section 5, so the single view widens as it arrives, and approval chains are configurable, so a workflow running across Sense India teams attaches to the existing role model.

4. Outcomes and how they are measured

Phase 1 is measured on the difference it makes to how the programme runs. The measures below are established as baselines in the first three weeks, with Sense India's programme team and a sample of partner organisations, and are reported live from the platform thereafter.

4.1 The measurement horizon

Targets are assessed after one year of the system running, measured for each partner organisation from its own go-live rather than from a single date, so that a partner joining later is judged on its own year. Movement is visible from first use and reported throughout, with the one-year point being where each partner is assessed against target.

4.2 The measures

The platform tracks each of these on the measurement dashboard, updated as records are created and reviewed, available to the Sense India programme team and to Koita Foundation.

Measure	How it is captured	Proposed target
Field staff time per service user record, from first contact to a complete profile	Timed observation at baseline; platform timestamps thereafter	40% reduction
Functional assessments completed inside the six-month cycle	Assessment date against due date, per service user	90% or above
Short-term objectives evaluated inside the quarter	Evaluation date against due date, per objective	90% or above
Elapsed days from screening to enrolment	Screening date to enrolment date	50% reduction
Mandatory field completeness at first save	Validation events	98% or above
Time to produce the quarterly report	Programme team record at baseline; export timestamps thereafter	From days to under one day
Partner organisations actively using the system	Distinct partners submitting records monthly	Agreed at rollout planning

Targets are proposals. Each is confirmed against its measured baseline in week three, so that the commitment reflects where the programme actually starts.

4.3 How the dashboard is organised

Partners join the platform in sequence, so at any moment they sit at different stages of adoption. The measurement dashboard presents them in three groups, so that every figure carries the share of the network it rests on.

Partners who have completed one year. The section leads with the count: how many of the partner organisations have completed a full year on the platform. Their scorecard shows performance against each target above, per partner and in aggregate. These are the figures that carry a verdict on the programme.

Partners still within their first year. An adoption-in-progress scorecard for each: go-live date and the date their year completes, months elapsed, records created, the share of their field staff actively using the system, and movement so far on each measure. Carrying both dates makes the rollout schedule readable from the same screen. This section reads as trajectory, and a partner moves into the first section as its year completes.

Partners yet to start. A count with the list of organisations, held in a collapsible section at the foot of the dashboard, so the remaining rollout stays visible while leaving the running partners in the foreground.

4.4 Measurement built into the platform

The platform records these figures itself. Timestamps on capture, save, sync, review and approval events produce the cycle-time and adherence measures without anyone assembling them. Completeness and validation events are logged. Partner activity is derived from submission records.

This is what allows a weekly review to run on current numbers, and it is designed in from the first sprint because retrofitting measurement into a working system costs several times what building it in costs.

4.5 Reporting

The measurement dashboard carries these live, available to Sense India's programme team and to Koita Foundation. The weekly review works from it. A written summary accompanies each milestone, recording movement against baseline and anything that changed the interpretation of a figure.

Where a target proves unreachable, the report says so and explains why, so that the next phase is planned against what the programme has learned.

5. Solution design

5.1 The beneficiary at the centre

Sense India's work is organised around people, and the data model follows that. One record represents one person, and everything the programme does for them attaches to it.

The person is the anchor. A service user record holds identity, disability type, service delivery mode, enrolment category, and the partner organisation serving them. Screening, assessment, plans, documents, sessions and network activity attach to that record rather than existing as separate collections joined at reporting time.

Relationships follow the service user. The programme captures the child first, and everyone connected to them is added against that record afterwards, which is how the work itself proceeds. Each connection carries its type.

Family connections cover parents joining Prayaas and siblings joining Bandhan, registered in relation to the service user already enrolled. Working connections cover teachers in Abhi-Prerna alongside the special educators, CBR workers and coordinators serving that child, each recorded against the children and families they work with. Adults with deafblindness enrolling in Udaan are service users in their own right and anchor their own connections.

Working connections carry their dates. Each connection between a practitioner and a service user records when it began and, where it has ended, when it ended. Earlier connections are retained rather than replaced, so a child's record holds the full history of who has worked with them.

The result answers three questions from the same record. Opening a child's file shows the family registered around them, everyone who has worked with them, and for how long: the special educators, CBR workers, teachers and mental health professionals, each with the period they were involved. Opening a practitioner's record shows their current caseload. Opening either shows what happened during the time they were connected.

One view of services received. For any beneficiary, the system answers a single question directly: what has this person and their family received, from whom, and when. Screening, assessments, plans and their reviews, network membership, internships, and the documents held for them appear together, filtered by the role of whoever is looking.

Later modules attach to the same record. Anything added after this release attaches to the person rather than forming a new store, so the single view widens instead of a second one being created.

This is a modelling decision taken at the start. Joining separate stores together once several modules exist requires more work and produces a less complete view.

5.2 The stack

Layer	Technology	Reasoning
Backend	Python 3.12, Django 5.x LTS	The framework behind every platform in Mahiti's portfolio, including Disha and MITRA. Long-term support carries three years of security patches, so the platform stays on a supported release across the contract. Mature internationalisation covers the Hindi and English requirement natively.
Web application	React with TypeScript	The stack the delivery team works in daily, with the deepest accessibility tooling of any front-end ecosystem, which supports automated accessibility checks in the build pipeline.

Layer	Technology	Reasoning
Mobile application	React Native	Shares language, types and validation logic with the web application, so a change to a form definition applies in both places. One codebase serves the Android devices in use across the partner network.
Database	PostgreSQL 16	Row-level security enforces partner isolation inside the database, so the boundary between partner organisations holds independently of application code. Full-text search covers Devanagari alongside Latin script. JSONB carries evolving form structures while the content model settles during discovery.
Hosting	AWS Mumbai, ap-south-1	Personal data of persons with disabilities remains in India. Containers on ECS Fargate, managed PostgreSQL on RDS, object storage on S3, content delivery through CloudFront.
Infrastructure	Terraform	Every environment is defined in code, so development, staging and production are reproducible and the deployment transfers with the system.

One language, one framework, one database, one cloud. A single engineer holds the whole system in view, and handover to Sense India follows the timeline proposed.

5.3 Where the ceiling sits

The application carries no inherent scaling limit. Growth is a matter of cloud infrastructure provisioning: as partner numbers, service user records and concurrent use increase, capacity is added and the operating system, database, application server and load balancer parameters are re-tuned to match.

Because infrastructure is defined in Terraform, adding capacity is a configuration change rather than a rebuild. The read path is already partner-scoped and indexed, so growth in the size of the network does not change the shape of the system.

5.4 Offline field capture

Survey, screening, functional assessment and profile capture run offline on the mobile application. The design rests on four decisions.

Durable identity on the device. Each record receives a UUID at the moment of creation, which serves as its permanent key. The human-readable Registration ID, composed from partner code, year and sequence, is assigned deterministically at synchronisation. Uniqueness is guaranteed by the server while capture continues wherever the field worker is.

Single writer per record. A service user record belongs to the field worker who created it while it is in draft. Coordinator and CB team comments attach as separate objects with their own timestamps, so a review comment and a field edit coexist without contention. Where the same user edits one record on two devices offline, the later edit by server timestamp is kept and the user is shown which version was saved.

Resumable synchronisation. Records queue locally and transmit incrementally. Photographs and uploaded documents transfer separately from record data, compressed for the connection, so an interrupted upload resumes from where it stopped.

A visible sync state. The application shows what is held locally, what has transmitted and what is waiting, so a field worker knows the state of their own work.

Target device baseline is a mid-range Android handset at Android 10 or above, tested on physical devices at each phase over throttled connections.

5.5 Multi-tenancy and roles

Partner organisations are tenants. A partner sees its own service users, its own staff and its own aggregate reports. The Sense India capacity building and MEAL teams see across all partners. Isolation is enforced through PostgreSQL row-level security, so the rule sits in the database.

The role model follows the programme's own chain of responsibility:

Role	Holds
CBR worker, special educator	Creates and updates survey, screening, assessment and profile records for their own service users
Coordinator	Reviews, comments on and signs assessments and IEPs within their partner organisation
Partner administrator	Manages their organisation's staff: adds and deactivates users, assigns roles, reassigns caseloads. Views service user and aggregate records for their organisation
State coordinator	Verifies network membership registrations
Institution head	Approves network membership registrations
Sense India CB team	Views and comments on assessments and IEPs across all partners, provides technical guidance
Sense India MEAL team	Views aggregate data across all partners, exports master data

Partner administration. Sense India creates the partner organisation and its first administrator, and from that point the partner manages its own team: adding field staff as they join, deactivating them as they leave, assigning roles, and reassigning a caseload when someone moves on. Sense India retains the same administration rights across all partners, so it can support a partner that needs help and step in where an administrator is unavailable.

Both parties work through the same screens, scoped to what each may reach. Across a network of this size, a partner waiting on the central team to add a new field worker would slow the work considerably, and this keeps that day-to-day change where it happens.

Every state change is written to an audit log attributable to a named user, retained and available to Sense India.

5.6 Partner onboarding and lifecycle

Sense India delivers through partner organisations, and each partnership has a life of its own: assessed before it begins, kept current while it runs, and monitored throughout. The system holds that lifecycle end to end.

Due diligence when a partnership forms. A structured assessment captures the organisation's legal registration, governance, financial position, operational reach and experience: registration

type and number, PAN and TAN, FCRA, 80G, 12A, CSR-1, NGO Darpan, RPWD and National Trust registrations, board composition and meeting frequency, senior management, three years of income and expenditure, staffing, districts covered, and experience of deafblindness and multiple disabilities. Supporting documents are uploaded against the categories they belong to. The assessment moves through the Sense India programme development and MEAL, finance and senior management teams before a partnership proceeds.

A compliance register the partner keeps current. Once a partnership is running, the partner maintains its own register: registration certificates, FCRA and 80G, audited accounts, and organisational policies including child and vulnerable adult protection, whistleblowing, anti-bribery and prevention of sexual harassment. Each document carries the date it is valid until.

An annual declaration, reviewed document by document. Each year the partner completes a compliance declaration, submitting current documents against the register. Sense India reviews every document before it becomes current, and the version it replaces is retained, so the register shows what was valid at any point in the partnership.

Expiry surfaced before it happens. Registrations lapse and certificates expire. The system tracks each validity date, prompts the partner ahead of expiry, and shows Sense India which partners have documents approaching or past their date. Across a network of this size, validity across all partners is visible in one place.

Monitoring visits that build on the last one. The Sense India MEAL and finance teams record each visit to a partner: the partner seen, service users met, activities observed and the major suggestions made. Previous reports for that partner are available while writing the current one, and each suggestion carries forward with its implementation tracked.

Onboarding into working. With due diligence complete, Sense India creates the partner organisation and its first administrator, and the partner takes over from there, as the previous section describes.

5.7 How a record travels

Work moves from a field worker through partner review to Sense India, and records carry that journey as state rather than leaving it to be tracked outside the system.

The states. A record is in draft while the field worker is completing it, and stays editable by them alone. On submission it becomes visible to the coordinator, who reviews and signs it, moving it to reviewed. Network membership registrations carry a further step, where a state coordinator verifies and an institution head approves. Comments from a coordinator or the Sense India CB team attach at any stage and leave the state unchanged, so guidance never blocks progress.

Review queues. A coordinator opens their queue and sees what is waiting for review, oldest first. The Sense India CB team sees assessments and plans that have passed partner review and are available for technical guidance. A partner administrator sees what is outstanding across their organisation.

Partner compliance documents follow the same path: the partner submits, Sense India reviews, the document becomes current, and the version it replaces is retained.

Returned work carries its reason. A coordinator returning a record to draft records why, and it reappears in the field worker's own list with that note attached.

Every transition is timestamped and attributed. A reviewed assessment is distinguishable from an unreviewed one, the programme dashboard shows work resting at a stage, and the cycle time measures are computed from these timestamps.

5.8 Language

Hindi and English at launch, with the internationalisation layer built so a further language is a translation exercise. Form labels, validation messages, notifications, help text and exported reports all carry through the same translation catalogue. Dates and numbers follow local convention. Devanagari input, storage, search and screen reader pronunciation are handled throughout.

5.9 Reaching families

Messages reach families as well as staff. A parent knows when the next home visit is scheduled, when an assessment is due, and when they are expected at an IEP planning meeting. Confirmation follows consent and enrolment, and a progress update follows each quarterly review.

In the family's own language. A preferred language, Hindi or English, is recorded on the family's record at enrolment and can be changed at any point. Messages go out in that language, drawn from the same translation catalogue as the interface.

On a channel they use. WhatsApp with SMS fallback, which is how these communities are already reached and the channel Mahiti operates today for Cuddles Foundation across 45+ hospitals.

Consent to be contacted is its own decision. A family may agree to their child's record existing while declining messages, so consent to be contacted is captured separately from consent to hold data, and either can be withdrawn without affecting the other.

Whether the phone is shared is recorded. Enrolment captures whether the contact number belongs to one person or is shared across the household. Where it is shared, the family gives explicit consent for information to be sent to it, and that consent governs what the system sends: sensitive content, including anything relating to mental health, goes only where the family has agreed it may. Where they decline, the message reduces to a neutral prompt and the detail reaches them through their CBR worker.

5.10 Consent and data protection

Consent is a first-class object with its own lifecycle. A consent record captures who gave it, on what basis, for what purpose, when, and against which version of the consent text. Parental consent applies for beneficiaries under 18. A guardian or supported consent path records the relationship where an adult with deafblindness needs support to give informed consent. Withdrawal is supported, with its effect on existing records defined and agreed with Sense India during discovery.

Data protection follows the DPDP Act: purpose limitation stated at collection, data minimisation in the form design, retention periods agreed and enforced, and data principal rights for access, correction and erasure supported through the application. Personal data and its backups reside in ap-south-1. Breach notification procedures are documented with Sense India as data fiduciary.

5.11 Accessibility

WCAG 2.1 AA is engineered in, with accessibility acceptance criteria written into every user story and automated checks running in the build pipeline.

Beyond conformance, the system provides the following for this community. Screen reader compatibility on both web and mobile, with Android TalkBack support of the kind already shipped on the MITRA application. Refreshable braille display compatibility on the web application, which is the access route for Udaan members with no residual hearing or sight. High contrast and text scaling modes for users with partial vision. Keyboard operability is complete on the web application, so nothing depends on a pointing device.

Manual testing runs against the assistive technologies actually in use, confirmed during discovery.

5.12 Components carried from existing systems

Component	Source
Assessment and individualised education plan model, goal setting, progress recording	Disha, Jai Vakeel Foundation
Offline capture and synchronisation, beneficiary lifecycle, TalkBack support	MITRA, Sightsavers India
Multi-tenant partner management, aggregate reporting across a partner network	Pragati, Child Rights and You
Configurable form engine, approval workflow	Roshini, Mission for Vision
Notification and scheduling engine, WhatsApp delivery	Food Heals, Cuddles Foundation

These are working production systems. Carrying components across is what brings the effort estimate in Section 9 to where it sits.

5.13 Room for what follows

Three design choices keep the system open to whatever Sense India adds next.

Anything added later attaches to the beneficiary record described above, so the single view widens as it arrives. Approval chains are configurable, so a workflow running across Sense India teams attaches to the existing role model. The form engine holds new instruments as configuration, so a new assessment is defined rather than developed, and the measurement telemetry extends to cover it.

5.14 Engineering standards

Code review by a second engineer before merge, with automated style and security checks in the pipeline. Test coverage on business logic measured and reported per change. Architecture decisions recorded as they are taken. API documentation generated from the code. An operational runbook covering deployment, rollback and restore, written before launch. Documentation is produced at each phase gate and forms the handover pack described in Section 10.

6. Delivery plan

6.1 Approach

Delivery runs in two-week sprints across seventeen weeks, counted from inception kick-off. Each sprint closes with working software in a staging environment that Sense India can use. The two items carrying the most design uncertainty, the structure of the person-centred narrative fields and the rollout across the partner network, begin in the first three weeks so that both have the length of the build to resolve.

Feedback from the weekly review with Koita Foundation and the fortnightly sprint review with Sense India is absorbed within the sprint cadence rather than added to it. Points raised at a review enter the next sprint, and the seventeen weeks accounts for that.

User acceptance testing sits at the end of the timeline rather than at each milestone. Build milestones are accepted on demonstration of working software in staging; formal acceptance testing runs once, in the final phase, before go-live.

6.2 Plan

Phase	Weeks	Activities	Milestone
Inception and baseline	1 to 3	Confirm role matrix, record workflow states, device profile, consent policy including guardian provisions, and language scope. Capture the baseline measures in Section 4 with the programme team and a sample of partner organisations. Working session on the structure of personal future plans, personal passports and IEP narrative fields. Agree rollout sequence and migration inventory.	Inception report, agreed backlog, measured baseline
Foundation	2 to 8	Multi-tenancy, roles and audit log. Record workflow and review queues. Partner administration. Hindi and English internationalisation. Offline synchronisation and Registration ID service. Consent capture. Document store. Scheduling and notification engine. Measurement telemetry.	Foundation demonstrated, offline capture working on target devices
Service user journey	6 to 11	Survey. Screening with fast-track flag. Enrolment and service user profile. Document upload. Functional vision and hearing assessment. Observation report.	Journey from consent to assessment demonstrated end to end
Clinical and person-centred modules	9 to 14	Mental health screening across five domains. Intervention planning and session tracking. Personal future plan. Personal passport.	Mental health pathway and person-centred plans demonstrated

Phase	Weeks	Activities	Milestone
Planning, networks and reporting	11 to 15	Individualised education plans with long-term goals, short-term objectives, review scheduling and monitoring views. Network member registration across the four networks with internship details. Partner due diligence, compliance register and MEAL monitoring visits. Master data export, programme dashboard and measurement dashboard.	IEP, network registration, partner processes and both dashboards demonstrated
Migration, acceptance and rollout	13 to 17	Migration of existing records with validation against the inventory. Accessibility testing against assistive technologies in use. User acceptance testing with the first partner cohort across a two week window: one week for Sense India to test and return consolidated feedback, one week for Mahiti to resolve findings and resubmit. Training for field staff, coordinators and administrators. Rollout to the agreed first cohort.	Migrated, accepted and in use with the first partner cohort

Phases overlap substantially, which is what the four month timeline requires. Foundation work begins while inception is closing, the clinical modules start before the service user journey completes, and rollout preparation runs alongside the final build phases. Staffing is staged to match, as Section 7 sets out, so overlapping phases draw on people engaged for that stretch of the work.

6.5 Reviews and change control

Weekly review with Koita Foundation. The Mahiti delivery lead and project manager attend, working from the live measurement dashboard and the sprint board. Each review covers progress against the sprint commitment, movement on the outcome measures, and any decision needed.

Sprint review with Sense India. Every two weeks, working software demonstrated to the programme team, with the coordinators and partner representatives who will use it invited from the third sprint onward.

Change control. Scope changes are logged, assessed for effect on cost and timeline, and approved by Sense India's programme lead before work begins.

6.6 What Mahiti needs from Sense India

Input	When	Effect if delayed
Named programme lead with decision authority	From inception	Design decisions accumulate at phase gates
Access to programme team and a partner sample for baseline capture	Weeks 1 to 3	Section 4 targets rest on estimates
Working session on narrative field structure for plans and passports	Weeks 1 to 3	Build proceeds on an assumption, with rework risk
Confirmation of whether mental health assessment gates entry to IEP	By end of inception	The sequence of the two assessment workflows stays open

Input	When	Effect if delayed
Consent policy decisions: guardian consent, withdrawal effects, retention	By end of inception	Consent module held provisional
Partner cohort identified for acceptance testing and first rollout	By week 9	Rollout compresses into the final sprint
Cloud account established in Sense India's name	By week 2	Deployment to staging delayed

7. Team

Roles come and go as the work needs them. The delivery lead, project manager and architect hold continuity across the engagement, engineering weight concentrates through the middle phases, and specialist skills step in for the stretch where they are needed.

Role	Carries	Engaged
Delivery lead	Accountable to Sense India for the release. Attends the weekly Koita Foundation review.	Throughout
Technical architect	Architecture, offline synchronisation design, data model, workflow states, hosting.	Heavily through inception and foundation, then on call for design decisions
Project manager	Sprint planning, milestone tracking, stakeholder coordination, training delivery.	Throughout, rising through rollout
Backend engineers, Django	Platform foundation, roles and permissions, record workflow, partner administration, API, consent and audit layers, module logic.	From week 2, at full weight through the build phases
Full stack engineers, React and React Native	Web and mobile applications, offline capture, form rendering, accessibility implementation.	From week 4, at full weight through the build phases
QA and accessibility tester	Functional and regression testing, offline field testing on physical devices, screen reader and assistive technology testing.	From the first increment, rising sharply through acceptance
Migration engineer	Inventory, mapping and validated migration of existing records.	Weeks 10 to 17
Trainer	Training for field staff, coordinators and partner administrators.	Final phase, alongside rollout

Staffing rises through the middle of the engagement and tapers as the work moves from building to accepting. Named individuals are confirmed at contract, drawn from the team that built Disha for Jai Vakeel Foundation and MITRA for Sightsavers India. The QA engineer proposed carries the TalkBack screen reader validation shipped on the MITRA Android application.

8. Risks

Risk	Effect	Mitigation	Owner
The structure of the narrative fields in plans, passports and IEPs resolves late	Rework in the planning module, which sits in the final build phase	Working session in the first three weeks, ahead of any build on those fields. The form engine holds structure as configuration, so a late change is a configuration change.	Mahiti, with Sense India programme team
Adoption across the partner network is slower than the rollout plan assumes	The Section 4 measures move slowly even where the system works	Rollout sequenced with a first cohort rather than all partners at once. Partner representatives join sprint reviews from the third sprint. Training built into the final phase. Adoption reported weekly. Optional L1 support through the first year, where taken, forms part of the mitigation for this.	Sense India, supported by Mahiti
Seventeen weeks leaves limited absorption for change	A significant scope change moves the delivery date, or displaces something agreed	Change control assesses cost and timeline effect before approval. The scope in Section 3 is fixed as the baseline at contract, and the phases are staffed as parallel streams so that a delay in one does not stall the others.	Mahiti delivery lead
Baseline measures prove difficult to capture in three weeks	Section 4 targets rest on estimates rather than measurement	Baseline capture begins in week one with a partner sample rather than the whole network. Measures the platform can derive itself are captured from first use.	Mahiti, with Sense India programme team
Field connectivity and device variation exceed the tested profile	Synchronisation behaves differently in the field than in testing	Device profile confirmed at inception. Testing on physical handsets at the versions in use. First cohort rollout surfaces this before the network-wide rollout.	Mahiti
Mental health assessment proves to gate entry to IEP	The order of the two assessment workflows changes	Question raised at inception, ahead of building either workflow. Both modules are in scope, so the decision sets their sequence rather than their inclusion.	Sense India programme team